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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/672,088   | 09/26/2003  | Stephen J. Whitney   | 112690-978          | 7059             |
| 29176  | 7590        | 04/04/2006           | EXAMINER            |                  |
| BELL, BOYD & LLOYD LLC<br>P. O. BOX 1135<br>CHICAGO, IL 60690-1135 |             |                      | NGUYEN, DANNY       |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2836                |                  |

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/672,088

Applicant(s)

WHITNEY, STEPHEN J.

Examiner

Danny Nguyen

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. The affidavit is ineffective for at least 2 reasons. First, the rejection was not under 35 USC 103 for which such an exception is made, see 103(c). Second, it does not contain the appropriate language for such an affidavit. To be specific, the affidavit would have to identify that the assignment had occurred at the time the invention was made. Affidavits appropriate for this situation would be one of attribution, discussed in MPEP 716.10 as discussed in MPEP 715.01(a).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-19, 32, 45-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 16 and 45, the phrase "at least one terminal electrically connecting a portion of the at least one terminal disposed on the surface to at least one of the first and second electrodes" is unclear.

In claim 32, the term "wherein the heat transferring structure..." is indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 7, 10, 11, 13, 29, 30, 36, 39, 40, 42 are rejected under 35

U.S.C. 102(a) as being anticipated by Tosaka et al (JN 10,144,506).

Regarding claims 1, 2, 7, 10, 11, 29, 30, 36, 39, 40, Tosaka discloses a circuit protection device (figures 1C and 2) comprises an over-current protection portion having a current limiting element (a thermistor 2) and a surface, an over-voltage protection portion (such as ceramic varistor 1) disposed on the surface via an attachment structure (6, see figure 3c) disposed between the over-current protection portion and the over-voltage protection portion, and configured to thermally coupled to the over-voltage protection portion to the over-current protection portion, and a plurality of terminations (such as 4b, 5b) configured to connect to the over-current protection portion and the over-voltage protection portion to a printed circuit board (such as a circuit board substrate 8 shown in figure 4).

Regarding claims 13, 42, Tosaka discloses the over-voltage protection portion comprises a die having first and second side, each having an electrical contact (12, see figure 4).

4. Claims 20-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Whitney et al (USPN 6,628,498).

Regarding claim 20, Whitney discloses an over-current and an over-voltage protection device (figure 3) comprises a first substrate (108) having a surface an electrode (134) disposed on the first surface, a second substrate (110) having a top surface and a bottom surface and an electrode (144) disposed on the bottom surface, a PTC element (106) position between the first and second substrate and electrically connected to the electrode, a voltage suppressor (104) disposed on the top surface of the second substrate and thermally coupled to the PTC element, and a plurality of terminals (120, 122, 124) electrically coupled to the PTC element and the voltage suppressor.

Regarding claims 21-26, Whitney discloses the second substrate includes a heat sink (186)., the voltage suppressor is bonded to the heat sink (col. 8, lines 18-51).

Regarding claims 27, 28, Whitney discloses a voltage variable material (404) disposed on the top surface of the second substrate.

Regarding claims 29, 30, 45 Whitney discloses a circuit protection device (figures 2-3) comprises an over-current protection portion (106) having a surface interposed between substrate layers; an over-voltage protection (104) attached to a circuit board and thermally coupled to the over-current protection portion via a heat transfer (186); and at terminal (120) connected the over-current and over-voltage protection portions to an electrical circuit.

Regarding claims 31-41, Whitney discloses the over-current portion includes first and second electrodes (134, 144) positioned between first and second substrates (108, 110), a heat transfer (186) (col. 6, lines 13-20, col. 8, lines 18-51).

Regarding claims 42-44, Whitney discloses the over-voltage portion comprises a die (204) (figures 7 and 8).

Regarding claims 45-48, Whitney discloses the substrate layers including a first substrate (108), a second substrate (110), the current limiting element (106), first and second electrodes (134, 144), a via (186) (figures 7, 8).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 16, 31, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tosaka et al (JN 10,144,506) in view of McGuire et al (USPN 6,023,403). Tosaka discloses all limitations of claim 1 as discussed above, but does not disclose the over-current protection portion as claimed. McGuire discloses the over-current protection portion (see figures 6b, 6h) includes a first substrate (such as top substrate 120), and a second substrate (e.g. bottom substrate 120), each substrate having an electrode (such as electrodes 100, 110), the current limiting element (PTC 17) positioned between the substrates, and at least one terminal (12) electrically connecting a portion of the at least

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one terminal (12) disposed on the surface to the first electrode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified to over-current protection portion of Tosaka to incorporate the over-current protection portion as disclosed by McGuire in order to improve the over-current protection (col. 2, lines 25-34).

6. Claims 20, 24, 25, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGuire et al (USPN 6,023,403) in view of Tosaka et al (JN 10,144,506).

Regarding claims 20, 27, 28, McGuire discloses a circuit protection device (figures 6E, 6H) comprises a first substrate (such as a top substrate 120) and an electrode (electrode 100) disposed on the first substrate, a second substrate (such as a bottom substrate 120) having a top surface, and a bottom surface, and an electrode (110) disposed on the bottom surface, an over-current protection portion having a current limiting element (PTC element 20) positioned between the first and second substrate and electrically connected to the electrodes, a plurality of terminations (155, 156) to connect to the over-current protection portion. McGuire does not disclose an over-voltage protection portion as claimed. Tosaka discloses a protection circuit (figure 1, 4) comprises an over-voltage protection portion (e.g. a ceramic varistor 1) is disposed on a surface of an over-current protection portion (a PTC element 2) and thermally coupled to the PTC element. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified to the protection circuit of

McGuire to incorporate the over-voltage protection portion as disclosed by Tosaka in order to protect the PTC element from over-voltage breakdown conditions (see 0003).

Regarding claims 24, 25, as for the over-voltage protection being various elements (zener diode, thyristor); it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any known over-voltage protection element as deemed suitable in order to provide the over-voltage protection function. This is further demonstrated by applicant's various embodiments of the over-voltage protection as claimed absent persuasive evidence that particular type of over-voltage protection element is significant.

7. Claims 8, 9, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tosaka et al (JN 10,144,506). As for the over-voltage protection being various elements (zener diode, thyristor); it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any known over-voltage protection element as deemed suitable in order to provide the over-voltage protection function. This is further demonstrated by applicant's various embodiments of the over-voltage protection as claimed absent persuasive evidence that particular type of over-voltage protection element is significant.

8. Claims 15, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tosaka et al (JN 10,144,506) in view of Yatsuo et al (USPN 6,353,236). Tosaka discloses all limitations of claim 1 as discussed above, but Tosaka does not teach the one of the sides of the over-voltage protection die as claimed. Yatsuo discloses that sides of the over-voltage portion (506) to a contact (508) via a bonding wire (507). It



would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the sides of the over-voltage circuit of Tosaka to incorporate with a contact and bonding wire as taught by Yatsuo in order to provide shorter conducting path and low manufacturing cost.

***Conclusion***


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/27/2006

  
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